

# TEST REPORT

**Applicant:** TFIVE PTY LTD  
**Address:** 10/29 Lorne Ave Killara NSW 2071 Australia  
**Equipment Type:** Smart Door Lock A100  
**Model Name:** ZNMS02ES  
**Brand Name:** Aqara  
**Test Standard:** IEC 62368-1: 2014  
AS/NZS 62368.1:2018  
**Test Date:** Jun. 02, 2022 ~ Jun. 15, 2022  
**Date of Issue:** Jul. 04, 2022

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** John Chen

John Chen

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Terry Wen

**Approved by:** Liao Jianming

(Technical Director)

### Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Jul. 04, 2022</u>	<u>Initial Issue</u>

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## 1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

### 1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province
Phone Number	+86 755 6685 0100

### 1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	TFIVE PTY LTD
Address	10/29 Lorne Ave Killara NSW 2071 Australia

### 2.2 Manufacturer Information

Manufacturer	Lumi United Technology Co., Ltd.
Address	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

### 2.3 Factory Information

Factory	N/A
Address	N/A

### 2.4 General Description for Equipment under Test (EUT)

Equipment Type	Smart Door Lock A100
Model Name Under Test	ZNMS02ES
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V1.3.1
Software Version	V0002
Dimensions (Approx.)	/
Weight (Approx.)	3.17Kg

### 2.5 Ancillary Equipment

Note: Not applicable.

## 2.6 Technical Information

The requirement for the following technical information of the EUT was tested in this report:

Ratings	Input: 6Vdc (The 8*AA dry battery consists of 4 groups in series and 2 groups in parallel) or 5.0Vdc (USB-C Emergency Power Supply)
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection	<input type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + ____ % / - ____ % <input checked="" type="checkbox"/> None
Supply Connection – Type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: Not directly connect to mains
Considered current rating of protective device as part of building or equipment installation	____ A; Installation location: <input type="checkbox"/> building; <input type="checkbox"/> equipment <input checked="" type="checkbox"/> N/A
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: Not directly connect to mains
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Class II with functional earthing <input type="checkbox"/> Not classified
Access location	<input type="checkbox"/> restricted access area <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating	55°C

ambient	
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP <u>X</u>
Power Systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - _____ V <sub>L-L</sub> ; <input type="checkbox"/> dc mains <input checked="" type="checkbox"/> N/A
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000m or less <input type="checkbox"/> <u>5000</u> m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000m or less <input type="checkbox"/> _____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 3.17Kg
Note: The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.	

### 3 SUMMARY OF TEST

#### 3.1 Test Standards

No.	Identity	Document Title
1	IEC 62368-1:2014	Audio/video, information and communication technology equipment –Part 1: Safety requirements
2	AS/NZS 62368.1:2018	Audio/video, information and communication technology equipment –Part 1: Safety requirements

#### 3.2 Possible test box verdict

Possible test box verdicts:
-test box does not apply to the test object. : N/A
-test object does meet the requirement.....: P(Pass)
-test object does not meet the requirement..: F(Fail)

### 3.3 Test item

<p><b>Tests performed (name of test and test clause):</b>            All applicable tests as described in Test Case and Measurement Sections were performed.</p> <table border="1"> <tr> <td>4</td><td>General requirements</td></tr> <tr> <td>5.2</td><td>Electrical energy source classifications</td></tr> <tr> <td>5.4.1.4, 6.3.2, 9.0, B.2.6</td><td>Maximum operating temperatures for materials, components and systems</td></tr> <tr> <td>6.2.2</td><td>Electrical power sources (PS) measurements for classification</td></tr> <tr> <td>6.3</td><td>Safeguards against fire under normal operating and abnormal operating conditions</td></tr> <tr> <td>6.4</td><td>Safeguards against fire under single fault conditions</td></tr> <tr> <td>9.4.1</td><td>Equipment safeguards for thermal burn</td></tr> <tr> <td>B.2.5</td><td>Input tests</td></tr> <tr> <td>B.3</td><td>Simulated Abnormal operating condition tests</td></tr> <tr> <td>B.4</td><td>Simulated single fault conditions</td></tr> <tr> <td>F.3.9</td><td>Durability, legibility and permanence of markings</td></tr> <tr> <td>T.5</td><td>Steady force test, 250 N</td></tr> <tr> <td>T.6</td><td>Impact tests</td></tr> </table> <p>Manufacturer specified the operating temperature range: 55°C.</p>	4	General requirements	5.2	Electrical energy source classifications	5.4.1.4, 6.3.2, 9.0, B.2.6	Maximum operating temperatures for materials, components and systems	6.2.2	Electrical power sources (PS) measurements for classification	6.3	Safeguards against fire under normal operating and abnormal operating conditions	6.4	Safeguards against fire under single fault conditions	9.4.1	Equipment safeguards for thermal burn	B.2.5	Input tests	B.3	Simulated Abnormal operating condition tests	B.4	Simulated single fault conditions	F.3.9	Durability, legibility and permanence of markings	T.5	Steady force test, 250 N	T.6	Impact tests	<p><b>Summary of compliance with National Differences:</b></p> <p><b>List of countries addressed:</b></p> <ol style="list-style-type: none"> <li>1. Australia / New Zealand</li> </ol>
4	General requirements																										
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F.3.9	Durability, legibility and permanence of markings																										
T.5	Steady force test, 250 N																										
T.6	Impact tests																										

### 3.4 General information

#### GENERAL REMARKS:

The test results presented in this report relate only to the object tested.

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"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

#### GENERAL PRODUCT INFORMATION:

- 1.The equipment is a Smart Door Lock A100, model ZNMS02ES. The equipment is considered as Class III equipment and for indoor use only.
- 2.Circuit characteristics: Only secondary (SELV) circuit.
- 3.Maximal ambient temperature as specified by the manufacturer: +55°C.
4. Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.

#### ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)

(Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse box classification e.g. PS3, ES3.

#### Electrically-caused injury (Clause 5):

(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)

Example: 5Vdc input

Source of electrical energy	Corresponding classification (ES)
All circuits	ES1

#### Electrically-caused fire (Clause 6):

(Note: List sub-assembly or circuit designation and corresponding energy source classification)

Example: Battery pack (maximum 85 watts):

PS1

Source of power or PIS	Corresponding classification (PS)
USB-C Port/Charging circuit	PS2

#### Injury caused by hazardous substances (Clause 7)

(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)

Example: Liquid in filled component

Glycol

Source of hazardous substances	Corresponding chemical
N/A	N/A

#### Mechanically-caused injury (Clause 8)

(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)

Example: Wall mount unit

MS1

<b>Source of kinetic/mechanical energy</b>	<b>Corresponding classification (MS)</b>
Edges and corners of accessible parts	MS1
Mass of EUT	MS1

**Thermal burn injury (Clause 9)**

(Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)

Example: Hand-held scanner – thermoplastic enclosure                    TS1

<b>Source of thermal energy</b>	<b>Corresponding classification (TS)</b>
Accessible parts	TS1

**Radiation (Clause 10)**

(Note: List the types of radiation present in the product and the corresponding energy source classification.)

Example: DVD – Class 1 Laser Product

<b>Type of radiation</b>	<b>Corresponding classification (RS)</b>
LEDs use as indicating lights of EUT	RS1

**OVERVIEW OF EMPLOYED SAFEGUARDS**

<b>Clause</b>	<b>Possible Hazard</b>			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source	<b>Safeguards</b>		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES1: Input circuit/port (6Vd.c. by 8*AA battery)	N/A	N/A	N/A
Ordinary	ES1: Input circuit/port (5.0Vd.c. by USB-C)	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	<b>Safeguards</b>		
		Basic	Supplementary	Reinforced
PCB	PS2: <100W circuit (Internal circuit/battery cell)	Comply with 6.3	V-1 or better	N/A
Enclosure	PS2: <100W circuit (Internal)	Comply with 6.3	Comply with 6.4.5	N/A

	circuit/battery cell)			
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Corner and edge are smooth	N/A	N/A	N/A
Ordinary	MS1: Mass of EUT	N/A	N/A	N/A
9.1	Thermal Burn –			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED indicating light	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments

Temperature (°C)	15°C to 35°C
Relative Humidity (%)	35% to 75%
Atmospheric Pressure (kPa)	100kPa to 102kPa

### 4.2 Test Equipment List

No.	Equipment name	Manufacture	Serial No.	Due Date	Usage
1	Digital Caliper	AIRUIZE	BZ-SFT-L228	2022/10/11	√
2	Heating Recorder	Keysight	BZ-SFT-L147	2022/10/11	√
3	Pull and push Tester	HANDPI	BZ-SFT-L045	2022/10/11	√
4	Digital Multimeter	Fluke	BZ-SFT-L198	2022/10/11	√
5	Impact ball	BALUN	BZ-KKX-L012	2023/06/06	√
6	Stop Watch	HUIBO	BZ-SFT-L068	2023/05/24	√
7	DC power source	ITECH	BZ-SFT-L143	2023/01/07	√
8	Temperature and humidity meter	CEM	BZ-SFT-L197	2022/10/12	√

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Clause	Requirement-Test	Result-Remark	Verdict
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## 5 TEST RESULTS

4	General Requirements		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended table 4.1.2)	P
4.1.2	Use of components	Components which are certified to EN and/or national standards are used correctly within their ratings. Components not covered by EN standards are tested under the conditions present in the equipment. See also Annex G.	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding limiting the outputs to fulfill ES1 and protection in regard to risk of spread of fire, mechanical and thermal burn injury considered.	P
4.1.15	Markings and instructions .....	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests .....	(See Annex T.5)	P
4.4.4.3	Drop tests .....	(See Annex T.7)	N/A
4.4.4.4	Impact tests .....	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....	The external enclosure cannot be opened without damaging the product.	N/A
4.4.4.6	Glass Impact tests.....	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests .....	(See Annex T.8)	N/A
4.4.4.8	Air comprising a safeguard .....	Considered, but no such barrier or enclosure provided.	N/A
4.4.4.9	Accessibility and safeguard effectiveness	All safeguards remain effective.	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions.	P

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Clause	Requirement-Test	Result-Remark	Verdict
4.6	Fixing of conductors	Only ES1 for internal circuits, no safeguard affected by conductor displacement.	N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to ..... :		N/A
4.7	Equipment for direct insertion into mains socket - outlets	The EUT is not for direct insertion into mains socket outlets, class III equipment	N/A
4.7.2	Mains plug part complies with the relevant standard ..... :		N/A
4.7.3	Torque (Nm) ..... :		N/A
4.8	Products containing coin/button cell batteries	No coin button cell batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery ..... :		—
4.8.4	Battery Compartment Mechanical Tests ..... :	No such battery compartment.	N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object ..... :	No likelihood of conductive object entry into enclosure (openings only for USB-C connectors).	P

<b>5</b>	<b>Electrically-caused injury</b>		P
5.2.1	Electrical energy source classifications .....:	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	ES1	P
5.2.2.2	Steady-state voltage and current .....:	(See appended table 5.2)	P
5.2.2.3	Capacitance limits.....:	Class III equipment	N/A
5.2.2.4	Single pulse limits .....:	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses .....:	No such repetitive pulses within the EUT.	N/A
5.2.2.6	Ringing signals .....:	No such ringing signals within the EUT.	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
5.2.2.7	Audio signals .....	No such audio signals	N/A
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Only ES1 circuits.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No ES3 circuit.	N/A
	a) Test with test probe from Annex V .....		N/A
	b) Electric strength test potential (V).....		N/A
	c) Air gap (mm) .....		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material	No such material.	N/A
5.4.1.3	Humidity conditioning .....		N/A
5.4.1.4	Maximum operating temperature for insulating materials .....		N/A
5.4.1.5	Pollution degree.....	2	--
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	No hygroscopic material used.	N/A
5.4.1.5.3	Thermal cycling	(See appended table 5.4.1.4)	N/A
5.4.1.6	Insulation in transformers with varying dimensions	2	—
5.4.1.7	Insulation in circuits generating starting pulses	Pollution degree 2 is applied. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.8	Determination of working voltage	See above	N/A
5.4.1.9	Insulating surfaces	No such transformer within the EUT	N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	No such starting pulses within the EUT	N/A
5.4.1.10.2	Vicat softening temperature .....		N/A
5.4.1.10.3	Ball pressure .....		N/A
5.4.2	Clearances		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
5.4.2.2	Determining clearance using peak working voltage		N/A
5.4.2.3	Determining clearance using required withstand voltage .....		N/A
	a) a.c. mains transient voltage.....:		—
	b) d.c. mains transient voltage .....		—
	c) external circuit transient voltage.....:		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....		N/A
5.4.3	Creepage distances.....:		N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group .....		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation .....		N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :	See above	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz..... :		N/A
5.4.5	Antenna terminal insulation	No such antenna terminal used.	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance ( $M\Omega$ ) ..... :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard ..... :	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%) ..... :		—
	Temperature ( $^{\circ}C$ ) ..... :		—
	Duration (h) ..... :		—
5.4.9	Electric strength test ..... :		N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuits.	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test ..... :		N/A
5.4.11	Insulation between external circuits and earthed circuitry ..... :	No such external circuits.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V) ..... :		—
	Nominal voltage $U_{peak}$ (V) ..... :		—
	Max increase due to variation $U_{sp}$ ..... :		—
	Max increase due to ageing $\Delta U_{sa}$ ..... :		—

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Clause	Requirement-Test	Result-Remark	Verdict
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa} \dots : \dots$		—
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing	No such construction.	N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable ..... :	No such external circuits.	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		NA
	Protective earthing conductor size ( $\text{mm}^2$ ) ..... :		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size ( $\text{mm}^2$ )..... :		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size ( $\text{mm}^2$ ), nominal thread diameter		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	(mm).....:		
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance ( $\Omega$ ) .....		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current.....:		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection).....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Earthed conductive accessible parts .....		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V) .....		—
	Measured current (mA) .....		—
	Instructional Safeguard .....		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA) .....		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) .....		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
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<b>6</b>	<b>Electrically- caused fire</b>		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault.....:	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1 .....	(See appended table 6.2.2)	P
6.2.2.5	PS2 .....	(See appended table 6.2.2)	P
6.2.2.6	PS3 .....		N/A
6.2.3	Classification of potential ignition sources	See the following details.	N/A
6.2.3.1	Arcing PIS .....	(See appended table 6.2.3.1)	N/A
6.2.3.2	Resistive PIS .....	(See appended table 6.2.3.2)	N/A
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials .....	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control of fire spread applied.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	Special conditions for temperature limited by fuse	No such consideration.	N/A
6.4.4	Control of fire spread in PS1 circuits	See below.	P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards ..... :	Compliance detailed as follows: – Printed board: rated min. V-1. – All other components: Meet 6.4.5.2 being at least V-2 except for parts mounted on min. V-1 material, small parts of combustible material (with mass less than 4g), Components complying with relevant IEC standard.	P
6.4.6	Control of fire spread in PS3 circuit		N/A
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General ..... :		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier	No specific barrier provided.	N/A
6.4.8	Fire enclosures and fire barriers	No need a fire enclosure or fire barriers.	N/A
6.4.8.1	Fire enclosure and fire barrier material properties	No fire enclosure required	N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	N/A
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings.	N/A
6.4.8.3.2	Fire barrier dimensions	No fire barrier.	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) ..... :	No openings	N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) ..... :	No openings	N/A
	Flammability tests for the bottom of a fire enclosure ..... :		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating .....		N/A
6.5	Internal and external wiring		N/A
6.5.1	Requirements		N/A
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....		—
6.5.3	Requirements for interconnection to building wiring .....		N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1		N/A

<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		N/A
7.2	Reduction of exposure to hazardous substances	No such hazardous substances	N/A
7.3	Ozone exposure	No ozone production	N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions .....		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....		—
7.6	Batteries .....	(See Annex M)	N/A

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General	No moving parts in the equipment – see below regarding edges and corners.	P
8.2	Mechanical energy source classifications	MS1: - No sharp edges or corners. MS1: - Mass less than 7 kg.	P
8.3	Safeguards against mechanical energy sources		P

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Clause	Requirement-Test	Result-Remark	Verdict
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	N/A
8.4.1	Safeguards	MS1 classification.	N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard..... :		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test..... :		N/A
8.6	Stability		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard..... :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force..... :		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt .....		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) .....		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....		N/A
8.9	Wheels or casters attachment requirements	No wheels or casters.	N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....		—
8.10	Carts, stands and similar carriers	No carts, stands or similar carriers.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C) .....		N/A
8.11	Mounting means for rack mounted equipment	Not such equipment.	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable $N$ .....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas .....	No such parts.	N/A
	Button/Ball diameter (mm).....:		—

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Clause	Requirement-Test	Result-Remark	Verdict
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<b>9</b>	<b>Thermal burn injury</b>		P
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4).	P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.4.2	Instructional safeguard .....:		N/A

<b>10</b>	<b>RADIATION</b>		P
10.2	Radiation energy source classification	Led used as indicating light	P
10.2.1	General classification	RS1	P
10.3	Protection against laser radiation	No laser radiation	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault .....:		N/A
	Instructional safeguard.....:		—
	Tool.....:		—
10.4	Protection against visible, infrared, and UV radiation		P
10.4.1	General	RS1	P
10.4.1.a)	RS3 for Ordinary and instructed persons..... :		N/A
10.4.1.b)	RS3 accessible to a skilled person ..... :		N/A
	Personal safeguard (PPE) instructional safeguard .....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1...:	LED only used for indicating light.	P

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Clause	Requirement-Test	Result-Remark	Verdict
10.4.1.d)	Normal, abnormal, single-fault conditions .....		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque .....		N/A
10.4.1.f)	UV attenuation .....		N/A
10.4.1.g)	Materials resistant to degradation UV .....		N/A
10.4.1.h)	Enclosure containment of optical radiation .....		N/A
10.4.1.i)	Exempt Group under normal operating conditions:	LED only used for indicating light.	P
10.4.2	Instructional safeguard.....:		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment.	N/A
10.5.1	X- radiation energy source that exists equipment .....		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards .....		N/A
	Instructional safeguard for skilled person .....		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation.....:		—
	Abnormal and single-fault condition.....:		N/A
	Maximum radiation (pA/kg) .....		N/A
10.6	Protection against acoustic energy sources	Not such an equipment.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) .....	See clause 10.6.5.3	N/A
	Output voltage, unweighted r.m.s. .....		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards .....		N/A
	Equipment safeguard prevent ordinary person to RS2 .....		—
	Means to actively inform user of increase sound pressure .....		—
	Equipment safeguard prevent ordinary person to		—

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Clause	Requirement-Test	Result-Remark	Verdict
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	RS2 .....		
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output .....		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....		—

B	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements .....	Maximum rated operating condition applied (See appended table)	P
	Audio Amplifiers and equipment with audio amplifiers .....	(See Annex E.2)	N/A
B.2.3	Supply voltage and tolerances	(See appended table B.2.5)	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements .....	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	No ventilation openings.	N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains.	N/A
B.3.4	Setting of voltage selector.....:	No setting of voltage selector within the EUT.	N/A
B.3.5	Maximum load at output terminals .....	No output terminals	N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	(See Annex E.2)	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended table B.3)	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited :	(See appended table B.4)	P
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See appended table B.3)	P
B.4.4	Short circuit of functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation.	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging under single fault conditions ....:	See annex M	N/A

C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A

D	TEST GENERATORS	N/A
D.1	Impulse test generators	N/A
D.2	Antenna interface test generator	N/A
D.3	Electronic pulse generator	N/A

E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS	N/A
E.1	Audio amplifier normal operating conditions	N/A
	Audio signal voltage (V) ..... : .....	—
	Rated load impedance ( $\Omega$ ) ..... : .....	—
E.2	Audio amplifier abnormal operating conditions	See above.
		N/A

F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS	P
F.1	General requirements	See the following details.
	Instructions – Language ..... : .....	English checked
F.2	Letter symbols and graphical symbols	See the following details.
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60227-1.
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.
F.3	Equipment markings	P
F.3.1	Equipment marking locations	P
F.3.2	Equipment identification markings	See the following details.
F.3.2.1	Manufacturer identification ..... : .....	See copy of marking plate.
F.3.2.2	Model identification ..... : .....	See copy of marking plate.
F.3.3	Equipment rating markings	See copy of marking plate.
		P

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Clause	Requirement-Test	Result-Remark	Verdict
F.3.3.1	Equipment with direct connection to mains	Class III equipment	N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage .....	---	—
F.3.3.4	Rated voltage .....:	6Vdc (8*AA Batteries by Supply) or 5.0Vdc (USB-C Emergency Power Supply)	—
F.3.3.4	Rated frequency .....:	DC supply	—
F.3.3.6	Rated current or rated power .....		—
F.3.3.7	Equipment with multiple supply connections	No multiple supply connection.	N/A
F.3.4	Voltage setting device	No such device.	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings .....	No mains appliance outlet.	N/A
F.3.5.2	Switch position identification marking .....	Not such switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings .....		N/A
F.3.5.4	Replacement battery identification marking .....		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment	Class III equipment.	N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class III equipment.	N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....	IPX0.	—
F.3.8	External power supply output marking	No external power supply output	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	See user manual.	P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area	Not used in restricted access area.	N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES2 limits		N/A
	h) Symbols used on equipment	No such symbols used as a safeguard considered.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment.	N/A
	j) Replaceable components or modules providing safeguard function	No such markings.	N/A
F.5	Instructional safeguards		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A

G	COMPONENTS	P
<b>G.1</b>	<b>Switches</b>	N/A
G.1.1	General requirements	No switch used.
G.1.2	Ratings, endurance, spacing, maximum load	N/A
<b>G.2</b>	<b>Relays</b>	N/A
G.2.1	General requirements	No such relay provided within the equipment.
G.2.2	Overload test	N/A
G.2.3	Relay controlling connectors supply power	N/A
G.2.4	Mains relay, modified as stated in G.2	N/A
<b>G.3</b>	<b>Protection Devices</b>	N/A
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	N/A
G.3.1.2	Thermal cut-off connections maintained and secure	N/A
G.3.2	Thermal links	N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.
G.3.2.1b)	Thermal links tested as part of the equipment	N/A
	Aging hours (H) .....	—
	Single Fault Condition .....	—
	Test Voltage (V) and Insulation Resistance (Ω) ..:	—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.
G.3.4	Overcurrent protection devices	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions .....		N/A
<b>G.4</b>	<b>Connectors</b>		N/A
G.4.1	Spacings	Not directly connected to mains.	N/A
G.4.2	Mains connector configuration .....		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No such connector. Only USB for connection for charging.	N/A
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components .....	No Wound Components	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C).....:		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	No Transformers	N/A
	Position.....:		—
	Method of protection .....		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings .....		—
G.5.3.3	Overload test.....:		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		P
G.5.4.1	General requirements	DC motor tested to comply with relevant requirements within the appliance.	P
	Position .....:	DC motor	—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature .....	(see appended table B.3)	P
	Electric strength test (V) .....	<42.4Vpeak, or 60Vd.c.	N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		N/A
G.6.1	General	No Wire Insulation	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements	No mains cord provided.	N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG).....:		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry .....		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....		—
	Diameter (m) .....		—
	Temperature (°C).....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test.....:		N/A
G.8.3.3	Temporary overvoltage.....:		N/A

## IEC 62368-1

Clause	Requirement-Test	Result-Remark	Verdict
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<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		
G.10.1	General requirements	No such resistors.	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable	No such resistors.	N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		
G.11.1	General requirements	No such Capacitor and RC units.	N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
<b>G.12</b>	<b>Optocouplers</b>		
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	No such Optocouplers.	N/A
	Type test voltage Vini, a .....		—
	Routine test voltage, Vini,b .....		—
<b>G.13</b>	<b>Printed boards</b>		
G.13.1	General requirements	See the following details.	P

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Clause	Requirement-Test	Result-Remark	Verdict
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board or over the outer surface of coated printed boards complied with the minimum clearance and creepage requirements of 5.4.2 and 5.4.3.	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation .....		N/A
	Number of insulation layers (pcs) .....		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....	No coating on component terminals considered to affect creepage or clearances.	N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such ICX provided within the equipment.	N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage .....		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....		—
D3)	Resistance .....		—

H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (mA): .....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—

<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>	N/A
	General requirements	N/A

<b>K</b>	<b>SAFETY INTERLOCKS</b>	N/A
K.1	General requirements	No safety interlock provided within the equipment.
K.2	Components of safety interlock safeguard mechanism .....	N/A
K.3	Inadvertent change of operating mode	N/A
K.4	Interlock safeguard override	N/A
K.5	Fail-safe	N/A
	Compliance .....	N/A
K.6	Mechanically operated safety interlocks	N/A
K.6.1	Endurance requirement	N/A
K.6.2	Compliance and Test method .....	N/A
K.7	Interlock circuit isolation	N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....	N/A
K.7.2	Overload test, Current (A).....:	N/A
K.7.3	Endurance test	N/A
K.7.4	Electric strength test .....	N/A

<b>L</b>	<b>DISCONNECT DEVICES</b>	N/A
L.1	General requirements	Not directly connect to the mains.
L.2	Permanently connected equipment	
L.3	Parts that remain energized	
L.4	Single phase equipment	

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Clause	Requirement-Test	Result-Remark	Verdict
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	Only consumer grade AA batteries used, no hazard.	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery	(see appended table Annex M)	N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery	(See appended table Annex M)	N/A
M.3.3	Compliance .....		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....	(see appended table M.4)	N/A
M.4.2.2 b)	Single faults in charging circuitry .....	(see appended table M.4)	N/A
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop	(see appended table T.7)	N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (mA) .....		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ ( $m^3/s$ ).....		N/A
M.8.2.3	Correction factors.....		N/A
M.8.2.4	Calculation of distance $d$ (mm) .....		N/A
M.9	Preventing electrolyte spillage		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....		N/A

<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		N/A
	Metal(s) used :	Class III equipment.	—

<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		N/A
	Figures O.1 to O.20 of this Annex applied :	Class III equipment.	—

<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		N/A
P.1	General requirements	No openings of enclosure.	N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metallized plastic parts :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) :		N/A
P.3	Safeguards against spillage of internal liquids	No such liquids.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A

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Clause	Requirement-Test	Result-Remark	Verdict
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P.4.2 a)	Conditioning testing		N/A
	Tc (°C) ..... : .....		—
	Tr (°C) ..... : .....		—
	Ta (°C) ..... : .....		—
P.4.2 b)	Abrasion testing ..... : .....		N/A
P.4.2 c)	Mechanical strength testing ..... : .....		N/A

<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output	(See appended table Q.1)	N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... : .....		—
	Current limiting method ..... : .....		—

<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		N/A
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... : .....		N/A

## IEC 62368-1

Clause	Requirement-Test	Result-Remark	Verdict
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S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Class III equipment	N/A
	Samples, material .....		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—

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Clause	Requirement-Test	Result-Remark	Verdict
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements		P
T.2	Steady force test, 10 N .....		N/A
T.3	Steady force test, 30 N .....		N/A
T.4	Steady force test, 100 N .....	(See appended table T.4)	N/A
T.5	Steady force test, 250 N .....	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test .....	(See appended table T.7)	N/A
T.8	Stress relief test .....	(See appended table T.8)	N/A
T.9	Impact Test (glass)	No glass used.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) .....		—
	Height (m) .....		—
T.10	Glass fragmentation test .....		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm) .....		—

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Clause	Requirement-Test	Result-Remark	Verdict
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<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A
U.3	Protective Screen .....	See above.	N/A

<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>	P
V.1	Accessible parts of equipment	P
V.2	Accessible part criterion	P

IEC 62368-1			
Clause	Requirement-Test	Result-Remark	Verdict

**ATTACHMENT TO TEST REPORT**

IEC 62368-1

(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment)

**Differences according to .....** : AS/NZS 62368.1:2018**TRF template used:** ..... : IECEE OD-2020-F3, Ed. 1.1**Attachment Form No.** ..... : AU\_NZ\_ND\_IEC62368\_1D**Attachment Originator**..... : JAS-ANZ**Master Attachment**..... : 2021-12-21

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	<b>National Differences</b>	P
<b>Appendix ZZ</b>	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand	P
<b>ZZ1 Scope</b>	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)	P
<b>ZZ2 Variations</b>	The following modifications are required for Australian/New Zealand conditions:	P
2	<p>Add the following to the list of normative references:</p> <p>The following normative documents are referenced in Appendix ZZ:</p> <ul style="list-style-type: none"> <li>-AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i></li> <li>-AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i></li> <li>-AS/NZS 3191, <i>Electric flexible cords</i></li> <li>-AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i></li> <li>-AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i></li> <li>-AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes</i></li> </ul>	P

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Clause	Requirement-Test	Result-Remark	Verdict
	<p><i>Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i></p> <p>-AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i></p> <p>-AS/NZS 60695.11.5, <i>Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i></p> <p>-AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-AS/NZS 60950.1:2015, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p>IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i></p> <p>-AS/NZS 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</i></p> <p>-AS/NZS 61558.2.16, <i>Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		
4.1.1	<p><b>Application of requirements and acceptance of materials, components and subassemblies</b></p> <p>1 Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</p> <p>2 Replace the text 'IEC 60065' with 'AS/NZS 60065'.</p>		P
4.7	<b>Equipment for direct insertion into mains socket-outlets</b>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
4.7.2	<p><b>Requirements</b></p> <p><i>Delete</i> the text of the second paragraph and <i>replace</i> with the following:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>		N/A
4.7.3	<p><b>Compliance Criteria</b></p> <p><i>Delete</i> the first paragraph and Note 1 and Note 2 and <i>replace</i> with the following:</p> <p><i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i></p>		N/A
4.8	<p><i>Delete</i> existing clause title and <i>replace</i> with the following:</p> <p><b>4.8 Products containing coin/button cell batteries</b></p>		N/A
4.8.1	<p><b>General</b></p> <p>1 Second dashed point, <i>delete</i> the text and <i>replace</i> with the following: – include coin/button cell batteries with a diameter of 32 mm or less.</p> <p>2 After the second dashed point, <i>insert</i> the following Note: NOTE 1: Batteries are specified in IEC 60086-2.</p> <p>3 After the third dashed point, <i>renumber</i> the existing Note as 'NOTE 2'.</p> <p>4 Fifth dashed point, <i>delete</i> the word 'lithium'.</p>		N/A
4.8.2	<p><b>Instructional Safeguard</b></p> <p>First line, <i>delete</i> the word 'lithium'.</p>		N/A
4.8.3	<p><b>Construction</b></p> <p>First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'</p>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
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4.8.5	<p><b>Compliance criteria</b>  <i>Delete the first paragraph and replace with the following:</i>  <i>Compliance is checked by applying a force of 30 N +/- 1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.</i></p>		N/A
5.4.10.2	<b>Test methods</b>		N/A
5.4.10.2.1	<p><b>General</b>  <i>Delete the first paragraph and replace with the following:</i>  In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2  and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.</p>		N/A
<b>Table 29</b>	<i>Replace the table with the following:</i>		

Parts	Impulse test		Steady state test		
	New Zealand	Australia	New Zealand	Australia	
Parts indicated in Clause 5.4.10.1 a) <sup>a</sup>	2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV	
Parts indicated in Clause 5.4.10.1 b) and c) <sup>b</sup>	1.5 kV 10/700 µs <sup>c</sup>		1.0 kV	1.5 kV	

<sup>a</sup> Surge suppressors shall not be removed.  
<sup>b</sup> Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.  
<sup>c</sup> During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.

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Clause	Requirement-Test	Result-Remark	Verdict
<b>5.4.10.2.2</b>	<p>After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows:</p> <p>NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines.</p> <p>NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>		N/A
<b>5.4.10.2.3</b>	<p>After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows:</p> <p>NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.</p>		N/A
<b>6</b>	<b>Electrically-caused fire</b>		P
<b>6.1</b>	<p><b>General</b></p> <p>After the first paragraph, <i>insert</i> the following new paragraph:</p> <p>Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202</p>		P
<b>6.6</b>	<p>After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows:</p> <p><b>6.201 External power supplies, docking stations and other similar devices</b> and  <b>6.202 Resistance to fire—Alternative tests</b>  (see special national conditions)</p>		P
<b>8.5.4</b>	<b>Special categories of equipment comprising moving parts</b>		N/A
<b>8.5.4.1</b>	<p><b>Large data storage equipment</b></p> <p>In the first dashed row and the second dashed rows <i>replace</i> ‘IEC 60950-1:2005’ with ‘AS/NZS 60950.1:2015’.</p>		N/A
<b>8.6</b>	<b>Stability of equipment</b>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
<b>8.6.1 and Table 36</b>	<p><b>Requirements</b></p> <p>1. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows:</p> <ul style="list-style-type: none"> <li>◦ The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display.</li> </ul> <p>2. Table 36, fifth row, <i>insert</i> '201' at the end of 'No stability requirements'</p> <p>3. Table 36, ninth row, <i>insert</i> '201' at the end of 'No stability requirements'</p> <p>4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply.</p> <p>5. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'</p>		N/A
<b>8.6.1</b>	After Clause 8.6.1 <i>add</i> the following new clauses: <b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b> (see special national conditions)		N/A
<b>Annex F Paragraph F.3.5.1</b>	<b>Mains appliance outlet and socket-outlet markings</b> <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
<b>Annex G Paragraph G.4.2</b>	<p><b>Mains connectors</b></p> <p>1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'.</p> <p>2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series'</p> <p>3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.</p>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
<b>Paragraph G.5.3.1</b>	<b>Transformers, General</b> 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.	Replaced	N/A
<b>Paragraph G.7.1</b>	<b>Mains supply cords, General</b> In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	No such cord provided	N/A
<b>Table G.5</b>	<b>Sizes of conductors</b> 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75 <sup>b</sup> ' 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: <sup>b</sup> This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm <sup>2</sup> three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
<b>Annex M</b> <b>Paragraph</b> <b>M.3.2</b>	<p><b>Protection circuits for batteries provided within the equipment, Test method</b></p> <p>After the first dashed point <i>add</i> the following Note:  <b>NOTE 201:</b> In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.</p>		N/A
	<b>Special national conditions (if any)</b>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
6.201	<p><b>External power supplies, docking stations and other similar devices</b></p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> <li>— at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and</li> <li>— of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher.</li> </ul> <p>For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn.</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries.</p> <p><i>Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4</i></p>	Considered	P
6.202	<b>Resistance to fire—Alternative tests</b>		N/A
6.202.1	<p><b>General</b></p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following:</p> <ul style="list-style-type: none"> <li>a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</li> <li>b) The following parts which would contribute</li> </ul>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	<p>negligible fuel to a fire:</p> <ul style="list-style-type: none"> <li>– small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings;</li> <li>– small electrical components, such as capacitors with a volume not exceeding 1 750 mm<sup>3</sup>, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10.</li> </ul> <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.</p>		
	<p><i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i></p> <p>For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		N/A
<b>6.202.2</b>	<p><b>Testing of non-metallic materials</b></p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.</p>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict						
6.202.3	<p><b>Testing of insulating materials</b></p> <p>Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections</p>		N/A						
	<p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test.</p> <p>However, parts shielded by a barrier which meets the needle-flame test need not be tested</p>		N/A						
	<p>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p> <table border="1"> <tr> <td><b>Clause of AS/NZS 60695.11.5</b></td><td>Change</td></tr> <tr> <td><b>9 Test procedure</b></td><td></td></tr> <tr> <td><b>9.2 Application of needle-flame</b></td><td> <p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following:</p> <p>The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p> </td></tr> </table>	<b>Clause of AS/NZS 60695.11.5</b>	Change	<b>9 Test procedure</b>		<b>9.2 Application of needle-flame</b>	<p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following:</p> <p>The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p>		N/A
<b>Clause of AS/NZS 60695.11.5</b>	Change								
<b>9 Test procedure</b>									
<b>9.2 Application of needle-flame</b>	<p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following:</p> <p>The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p>								

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Clause	Requirement-Test	Result-Remark	Verdict
	The duration of application of the test flame shall be 30 s 1 s.		
	<b>9.3 Number of test specimens</b>  Replace with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.		
	<b>11 Evaluation of test results</b>  Replace with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.		
<b>6.202.4</b>	<b>Testing in the event of non-extinguishing material</b>  If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glow wire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	<p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		
<b>6.202.5</b>	<p><b>Testing of printed boards</b></p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source.</p> <p>The test is not carried out if—</p> <ul style="list-style-type: none"> <li>– the printed board does not carry any potential ignition source;</li> <li>– the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or</li> <li>– the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding</li> </ul>		N/A

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Clause	Requirement-Test	Result-Remark	Verdict
	<p>400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely.</p> <p><i>Conformance shall be determined using the smallest thickness of the material.</i></p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		
<b>6.202.6</b>	<p><b>For open circuit voltages greater than 4 kV</b></p> <p>Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.</p>		N/A

## IEC 62368-1

Clause	Requirement-Test	Result-Remark	Verdict
8.6.1.201	<p><b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b></p> <p>MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall or ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> <li>– element 1a: not available;</li> <li>– element 2: ‘Stability Hazard’ or equivalent wording;</li> <li>– element 3: ‘The television set may fall, causing serious personal injury or death’ or equivalent text;</li> <li>– element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions</li> </ul>		N/A
8.6.1.202	<p><b>Restraining device</b></p> <p>MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage.</p> <p>Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.</p>		N/A

## IEC 62368-1

Clause	Requirement-Test	Result-Remark	Verdict
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4.1.2		TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1</sup> )	
PCB	Shenzhen LongTeng Electric circuit Technology Co Ltd	LTM07	V-0, 130°C	UL 94 UL 796	UL E467745	
Alternative	Interchangeable	Interchangeable	V-1 or better, 130°C	UL 94, UL 796	UL	
Plastic Enclosure (Battery compartments)	LG Chem (Guangzhou) Engineering Plastics Co Ltd	LUPOY EF- 1006F(m)	V-0, 125°C, Min. thickness: 1.34mm	UL 746, UL 94	UL E248280	
Alternative	Covestro Deutschland AG [PC Resins]	FR3010 +	V-0, 85°C, Min. thickness: 1.34mm	UL 746, UL 94	UL E41613	
Alternative	CHI MEI CORPORATION	PA-765(+)	V-0, 80°C, Min. thickness: 1.34mm	UL 746, UL 94	UL E56070	
Alternative	Interchangeable	Interchangeable	HB, 60°C, Min. thickness: 1.34mm	UL 746, UL 94	UL	
Metal Enclosure	Interchangeable	Interchangeable	Min. thickness: 1.50mm	IEC/EN 62368-1	Tested with appliance	
DC Motor	HuiZhou Star China Motor Co., Ltd.	SCFF-030PK- 09220	5Vdc, 230mA, $7100 \pm 10\%$ r/min	IEC/EN 62368-1	Tested with appliance	
Supplementary information:						

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Clause	Requirement-Test	Result-Remark	Verdict
<b>4.8.4, 4.8.5</b>	<b>TABLE: Lithium coin/button cell batteries mechanical tests</b>		N/A
(The following mechanical tests are conducted in the sequence noted.)			
<b>4.8.4.2</b>	<b>TABLE: Stress relief test</b>		—
	Part	Material	Oven Temperature (°C)
	--	--	--
<b>4.8.4.3</b>	<b>TABLE: Battery replacement test</b>		—
Battery part no.....:			—
Battery Installation/withdrawal	Battery Installation/Removal Cycle		Comments
	1		--
	2		--
	3		--
	4		--
	5		--
	6		--
	8		--
	9		--
	10		--
<b>4.8.4.4</b>	<b>TABLE: Drop test</b>		—
Impact Area	Drop Distance	Drop No.	Observations
--	--	1	--
--	--	2	--
--	--	3	--
<b>4.8.4.5</b>	<b>TABLE: Impact</b>		—
Impacts per surface	Surface tested	Impact energy (Nm)	Comments
--	--	--	--
--	--	--	--
--	--	--	--
<b>4.8.4.6</b>	<b>TABLE: Crush test</b>		—
Test position	Surface tested	Crushing Force (N)	Duration force

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Clause	Requirement-Test	Result-Remark	Verdict
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			applied (s)
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Supplementary information:

5.2	Table: Classification of electrical energy sources				P
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## 5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions <sup>1)</sup>	Parameters			ES Class
				U (Vrms or Vpk)	I (Apeak or Aroot)	Hz	
1	6.0Vdc	8*AA Batteries by Supply	Normal	6.36Vd.c.	--	--	ES1
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
2	5.0Vdc	USB-C Emergency Power Supply	Normal	5.13Vd.c.	--	--	ES1
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

## 5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	Normal	--	--	--
			Abnormal	--	--	
			Single fault – SC/OC	--	--	

## 5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	

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Clause	Requirement-Test			Result-Remark			Verdict	
--	--	--	Normal Abnormal Single fault – SC/OC	--	--	--	--	
--	--	--		--	--	--	--	
--	--	--		--	--	--	--	
5.2.2.5 - Repetitive Pulses								
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class	
				Off time (ms)	Upk (V)	Ipk (mA)		
--	--	--	Normal Abnormal Single fault – SC/OC	--	--	--	--	
--	--	--		--	--	--	--	
--	--	--		--	--	--	--	
Test Conditions:								
Normal – Full load and no load.								
Abnormal – Overload output								
Supplementary information: SC=Short Circuit, OC=Open Circuit								

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P
		Supply voltage (V) :	6.0Vd.c. (8*AA Batteries by Supply)	5.0Vd.c. (USB-C Emergency Power Supply)	—
		Ambient T <sub>min</sub> (°C) :	--	--	—
		Ambient T <sub>max</sub> (°C) :	--	--	—
		Tma (°C) :	See below	See below	—
Maximum measured temperature T of part/at:		T (°C)			Allowed T <sub>max</sub> (°C)
PCB near U1A		24.1	55.4	23.1	55.1
PCB near U2A		23.6	54.9	23.1	55.1
PCB near U15A		23.6	54.9	23.1	55.1
Batteries surface		24.1	55.4	23.3	55.3
Plastic enclosure (inside near battery)		24.1	55.4	23.1	55.1
					130
					130
					130
					130
					130

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Clause	Requirement-Test		Result-Remark		Verdict
Ambient	23.7	55.0	23	55.0	--
Touch temperature:					
Plastic enclosure (outside near battery)	22.8	25.8	22.9	25.6	77
Metal enclosure (outside near PCB)	23.4	26.4	22.8	25.6	60
Rotary switch	23.3	26.3	23.0	25.7	77
Handle	23.2	26.2	22.8	25.5	60
Display	23.8	26.8	23.0	25.8	77
Ambient	22.0	25.0	22.2	25.0	--

Supplementary information: \* Temperature limit for TS1 of accessible enclosure according to Table 38.

Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 55°C.

Note 2: The temperatures were measured under the worst case normal mode defined in clause B.2.1.

Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--

5.4.1.8	Table: working voltage measurement				N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments		
--	--	--	--	--	
supplementary information:					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Penetration (mm)				—
.....				—
:				—
Object/ Part No./Material	Manufacturer/trademark		T softening (°C)	
--	--		--	
supplementary information:				

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Clause	Requirement-Test	Result-Remark	Verdict

<b>5.4.1.10.3</b>	<b>TABLE: Ball pressure test of thermoplastics</b>			N/A
Allowed impression diameter (mm) .....	$\leq 2 \text{ mm}$			—
Object/Part No./Material	Manufacturer/trademark		Test temperature ( $^{\circ}\text{C}$ )	Impression diameter (mm)
--	--		--	--
Supplementary information:				

<b>5.4.2.2, 5.4.2.4 and 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>					N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)	Required cl (mm)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)
--	--	--	--	--	--	--
Supplementary information:						

<b>5.4.2.3</b>	<b>TABLE: Minimum Clearances distances using required withstand voltage</b>				N/A
	<b>Overvoltage Category (OV):</b>				
	<b>Pollution Degree:</b>				
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)	
--		--	--	--	
Supplementary information:					

<b>5.4.2.4</b>	<b>TABLE: Clearances based on electric strength test</b>				N/A
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
--		--	--	--	
Supplementary information:					

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					N/A
Distance through insulation di at/of:		Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)

IEC 62368-1					
Clause	Requirement-Test	Result-Remark		Verdict	
--	--	--	--	--	--
Supplementary information:					

5.4.9	TABLE: Electric strength tests				N/A
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No		
--	--	--	--	--	--
Supplementary information:					

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
--	--	--	--	--	--
Supplementary information:					

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part		Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
--		--	--	--	--
Supplementary Information:					

5.7.2.2, 5.7.4	TABLE: Earthing accessible conductive part			N/A
Supply voltage..... :			—	
Location			Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
			1 (e closed, normal and reverse polarity p)	
			2* (natural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p))	

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Clause	Requirement-Test	Result-Remark	Verdict
		3 (for IT system, each phase conductor faulted to earth, one at a time (switch g))	
		4 (for three-phase, each phase conductor open, one at a time switches l)	
		5 (IT power system or three phase delta system)	
		6 (three-phase for use on centre-earthed delta supply system)	
		8 (incidental electrically connected to other parts)	

Notes:

- [1] Supply voltage is the anticipated maximum Touch Voltage
- [2] Earthed neutral conductor [Voltage differences less than 1% or more]
- [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
- [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
- [5] (\*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.
  - a) Not considered IT power system.
  - b) Not three phase equipment.
  - c) Not IT power system or three phase delta system.
  - d) Not three-phase for use on centre-earthed delta supply system.
  - e) Not such parts.

6.2.2	Table: Electrical power sources (PS) measurements for classification					P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s	PS Classification	
6.0Vd.c. (8*AA Batteries by Supply)	--	Power (W):	--	--	PS1 <sup>1)</sup>	
		VA (V):	--	--		
		IA (A):	--	--		
USB-C Emergency Power Supply	--	Power (W):	--	--	PS2 <sup>2)</sup>	
		VA (V):	--	--		
		IA (A):	--	--		

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Clause	Requirement-Test	Result-Remark	Verdict

## Supplementary Information:

- 1) The product is to be powered by 8\*AA battery., PS1 circuit assumed.
- 2) The is recharged by external power source via USB-C port, PS2 circuit assumed.

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				N/A
Location	Open circuit voltage After 3 s (V <sub>p</sub> )	Measured current r.m.s (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> x I <sub>rms</sub> )	Arcing PIS? Yes / No	
See below	--	--	--	--	--
Supplementary information:					

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)					N/A
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No	
See below	--	--	--	--	--	--

## Supplementary Information:

All power dissipating components in primary and secondary circuit which are supplied by a source exceeding 15W (since the output rating is higher than 15VA) are considered as resistive PIS.

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

B.2.5 TABLE: Input test								P	
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
6VDC	--	0.00023		0.00138	--	--	--	Normal working <sup>1)</sup>	
5VDC	--	0.0012		0.006	--	--	--	Normal working <sup>2)</sup>	
Supplementary information:									

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Clause	Requirement-Test	Result-Remark	Verdict
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B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
1) 6.0Vd.c. (8*AA Batteries by Supply)									
2) 5.0Vd.c. (USB-C Emergency Power Supply)									

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....	See below							—
Power source for EUT: Manufacturer, model/type, output rating .:	--							—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Motor	locked	5.0Vdc	7hrs	--	--	--	Temperature measured: Motor surface: 48.8 Ambient: 22.1	No ignition of the wrapping tissue or cheesecloth. (The motor is placed on a wooden board that is covered with a single layer of wrapping tissue, the motor in turn is covered with a single layer of cheesecloth) Unit normal operation No hazard
Supplementary information:								
Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.								

## IEC 62368-1

Clause	Requirement-Test	Result-Remark	Verdict
--------	------------------	---------------	---------

<b>B.4 TABLE: Fault condition tests</b>									P		
Ambient temperature (°C) .....					See below			—			
Power source for EUT: Manufacturer, model/type, output rating ..					--			—			
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation			
U2A pin1-5	S-C	6.0Vd.c.	10mins	--	--	--	--	Input current: 0.23mA EUT normal working, No damaged, No hazard.			
U8A pin4-3	S-C	6.0Vd.c.	10mins	--	--	--	--	Input current: 0.23mA EUT normal working, No damaged, No hazard.			
D10A	S-C	6.0Vd.c.	10mins	--	--	--	--	Input current: 0.23mA EUT normal working, No damaged, No hazard.			
Supplementary information:											
1) S-C: Short-circuited; O-C: Open-circuited; O-L: Overloaded; OVC=Overcharge. 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.											

<b>Annex M TABLE: Batteries</b>		N/A
The tests of Annex M are applicable only when appropriate battery data is not available		
Is it possible to install the battery in a reverse polarity position?		Impossible
	Non-rechargeable batteries	Rechargeable batteries
	Discharging	Charging Discharging Reversed charging

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Clause	Requirement-Test				Result-Remark			Verdict						
	Meas. current	Manuf. Specs.	Un-intentional charging	Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.	Meas. current	Manuf. Specs.					
Max. current during normal condition	--	--	--	--	--	--	--	--	--					
Test results:														
- Chemical leaks														
- Explosion of the battery														
- Emission of flame or expulsion of molten metal														
- Electric strength tests of equipment after completion of tests														
Supplementary information:														
S-C: Short-circuited														

Annex M.4	TABLE: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (°C)		
--	--	--	--	--	--	
Supplementary Information:						
SC: Short-circuited						
Battery identification	Charging at $T_{\text{lowest}}$ (°C)	Observation		Charging at $T_{\text{highest}}$ (°C)	Observation	
--	--	--		--	--	
Supplementary Information:						

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					N/A
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	Uoc (V)	Isc (A)		S (VA)	
			Meas.	Limit	Meas.	Limit

IEC 62368-1						
Clause	Requirement-Test			Result-Remark		Verdict
--	--	--	--	--	--	--
Supplementary Information:						
S-C: Short-circuited; O-C: Open-circuited						

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Rear enclosure	Metal	2.75	100	5	All safeguard remains effective	
Side enclosure	Metal	1.50	100	5	All safeguard remains effective	
Front enclosure	Metal	2.68	100	5	All safeguard remains effective	
Supplementary information:						

T.6, T.9	TABLE: Impact tests					N/A		
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation				
--	--	--	--	--				
Supplementary information:								

T.7	TABLE: Drop tests					P		
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation				
Rear enclosure	Metal	2.75	1000	All safeguard remains effective				
Side enclosure	Metal	1.50	1000	All safeguard remains effective				
Front enclosure	Metal	2.68	1000	All safeguard remains effective				
Supplementary information:								

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Clause	Requirement-Test	Result-Remark	Verdict

T.8	<b>TABLE: Stress relief test</b>					N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
--	--	--	--	--	--	--
Supplementary information:						

## 6 Product Marking Label



Label of main unit

## 7 PHOTO DOCUMENT

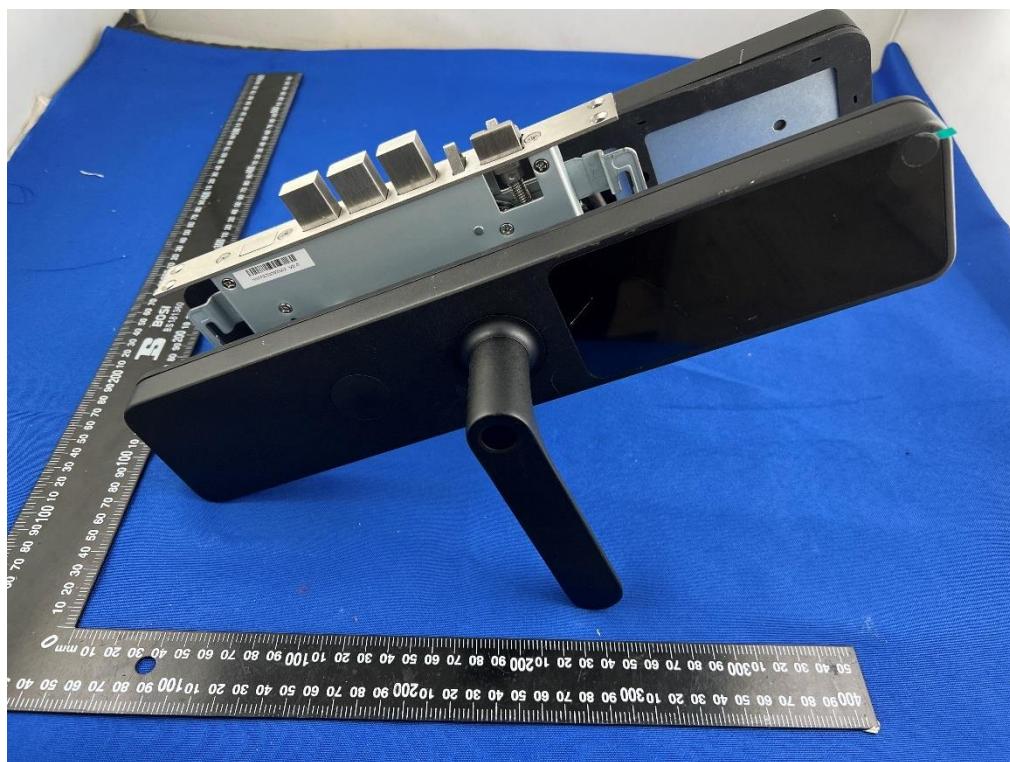


Figure 1. Overall view

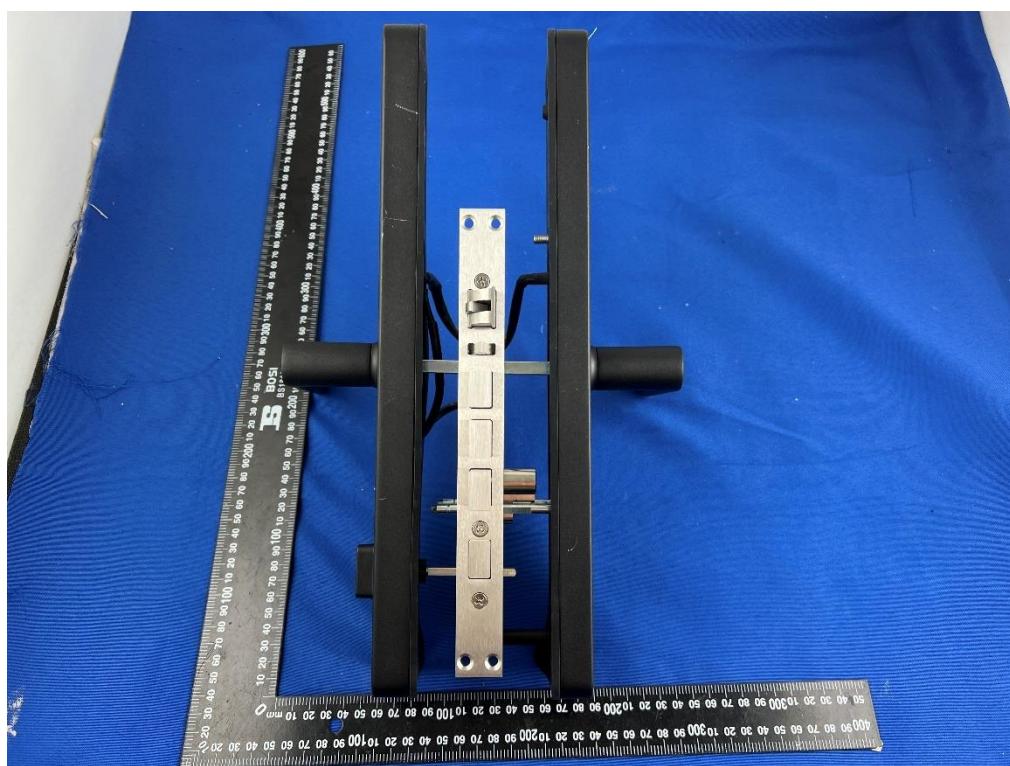


Figure 2. Overall view



Photo 3: Overall view

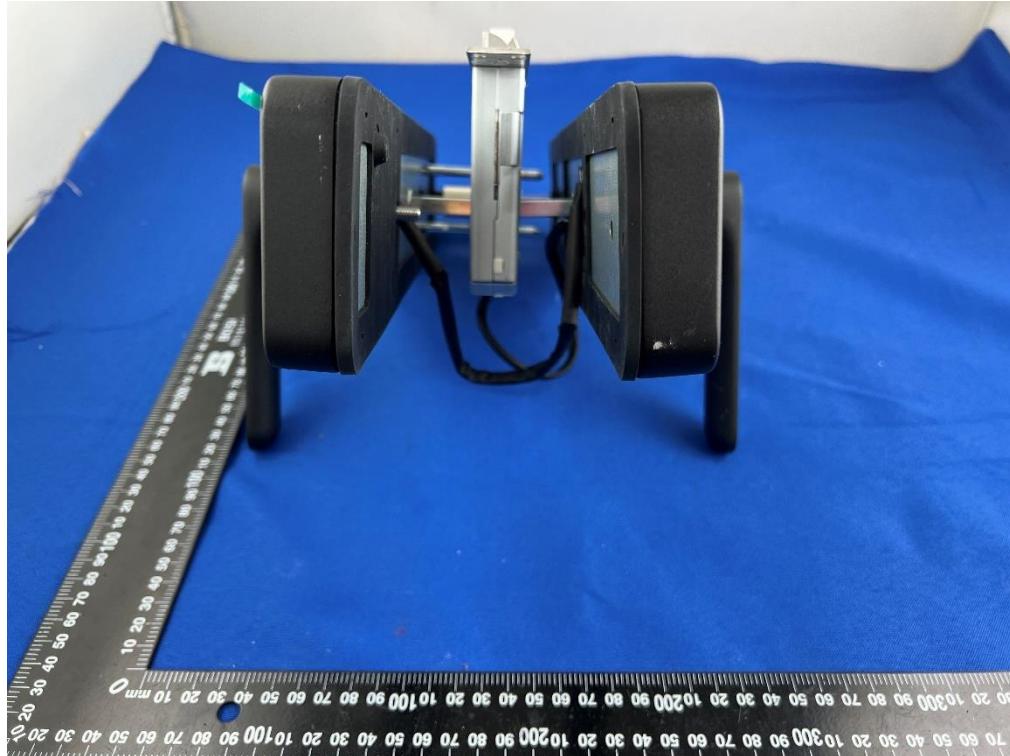


Photo 4: Overall view

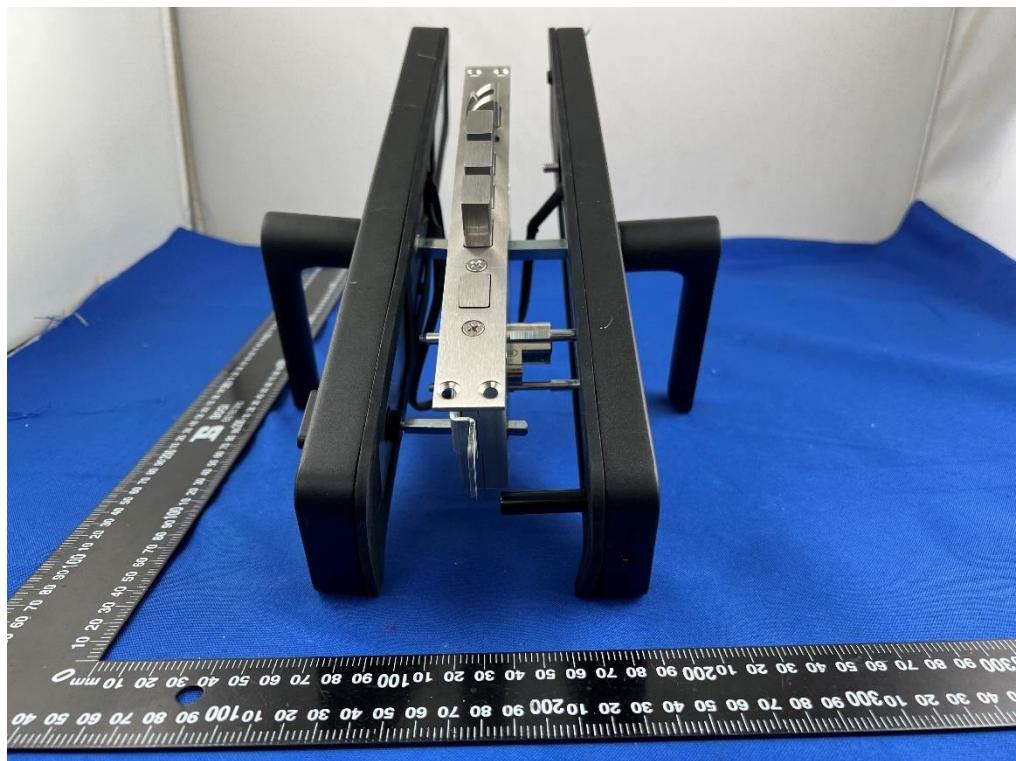


Photo 5: Overall view

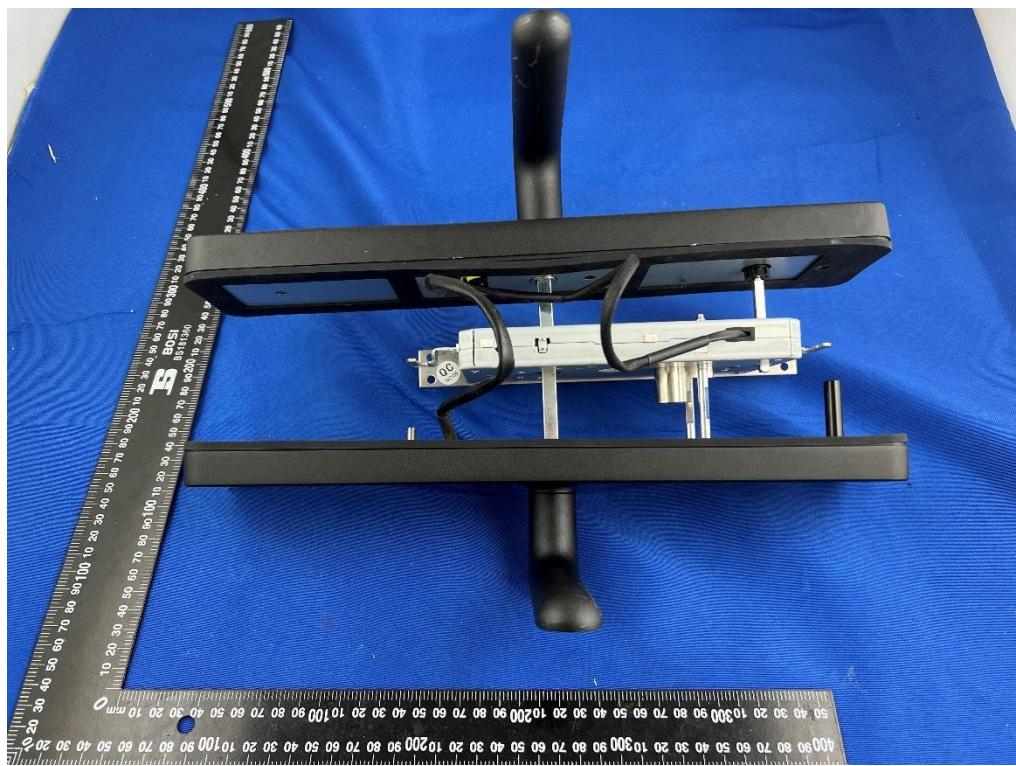


Photo 6: Overall view

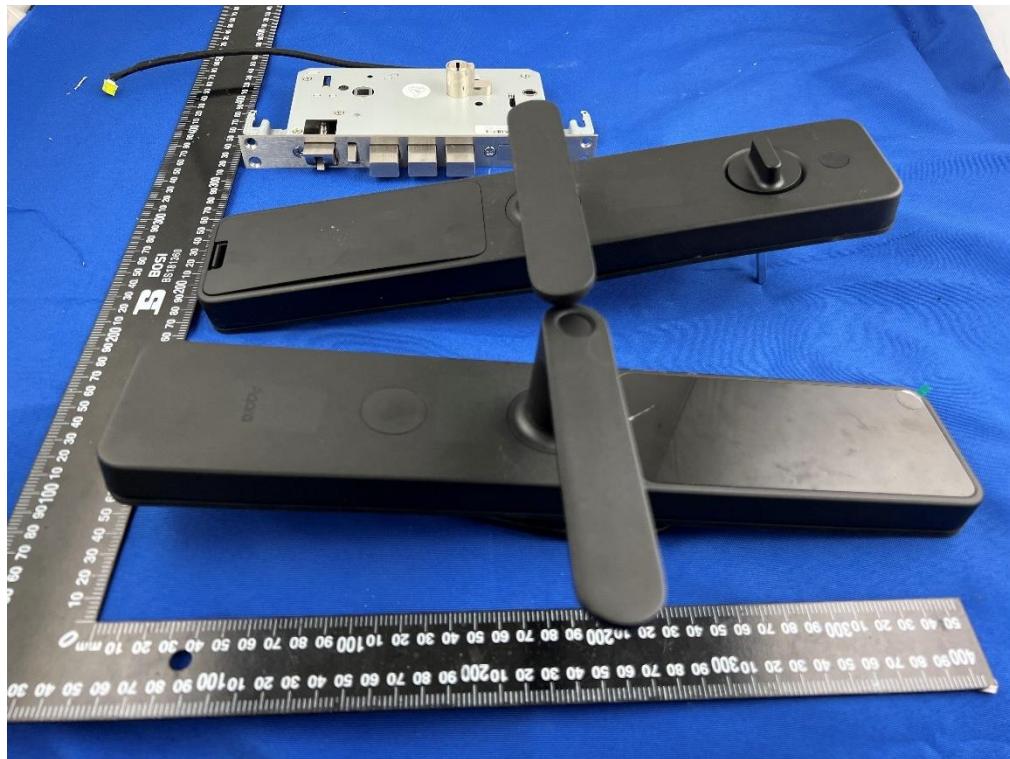


Photo 7: Overall view

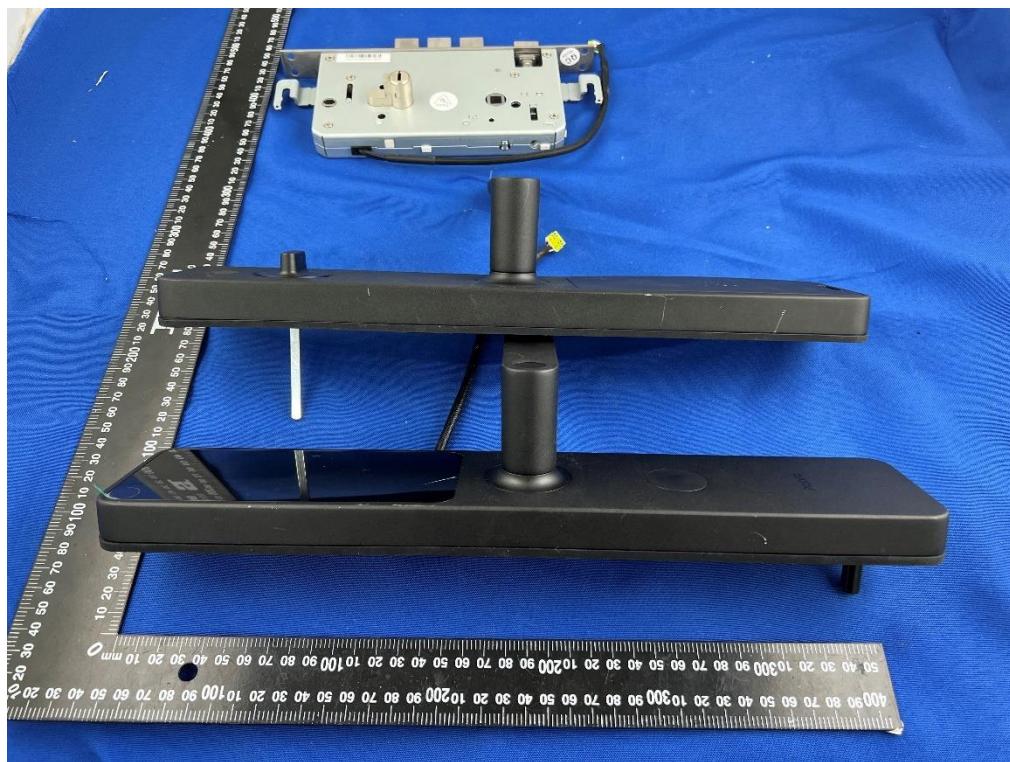


Photo 8: Overall view

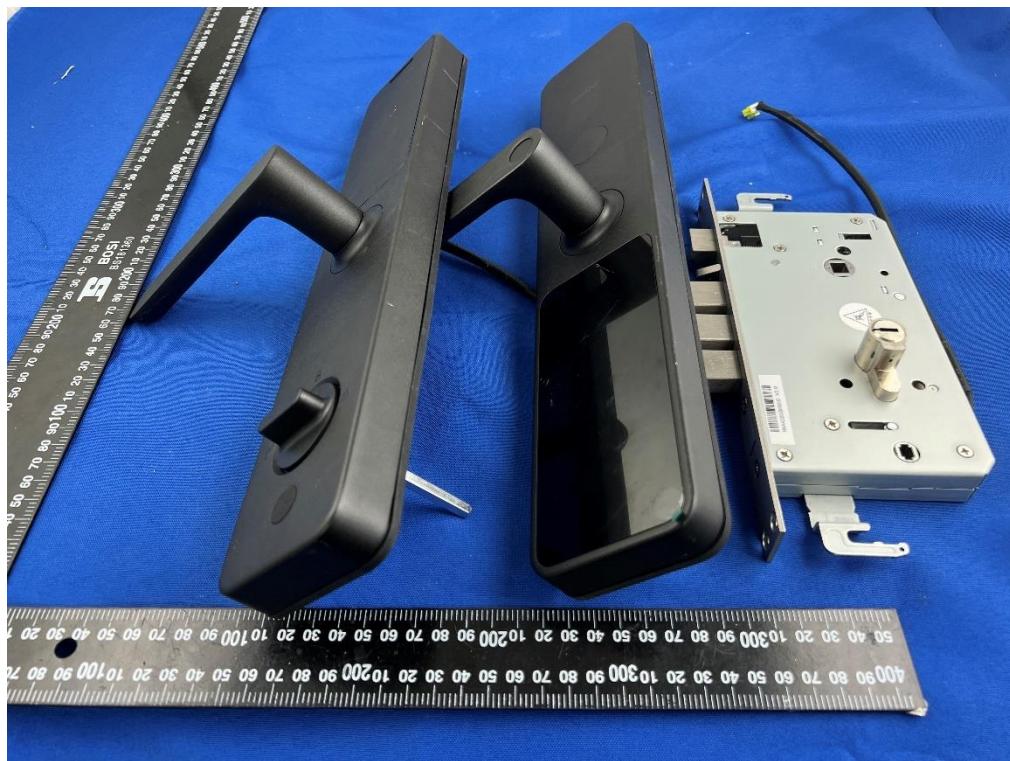


Photo 9: Overall view



Photo 10: Overall view

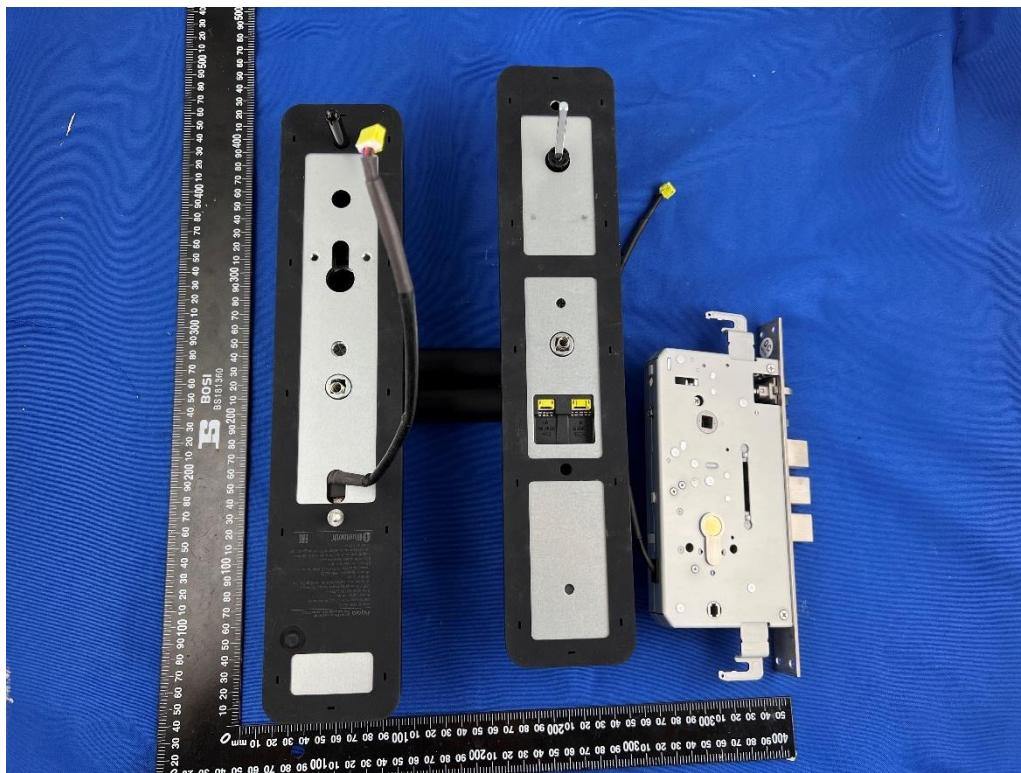


Photo 11: Overall view

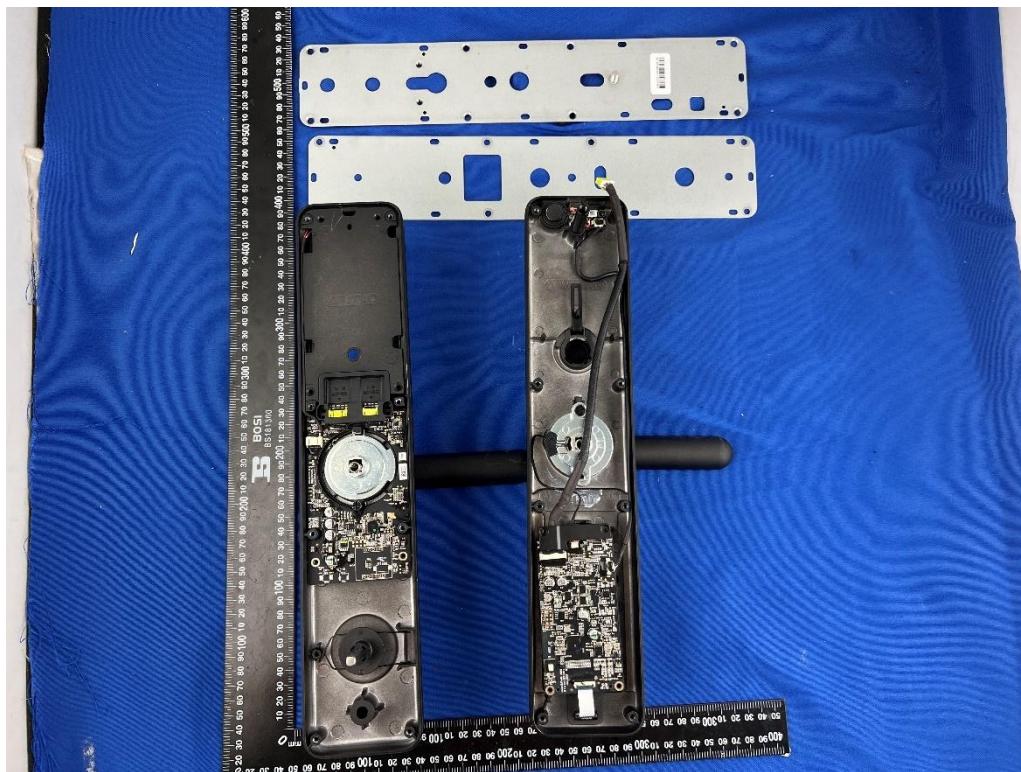


Photo 12: Inside view

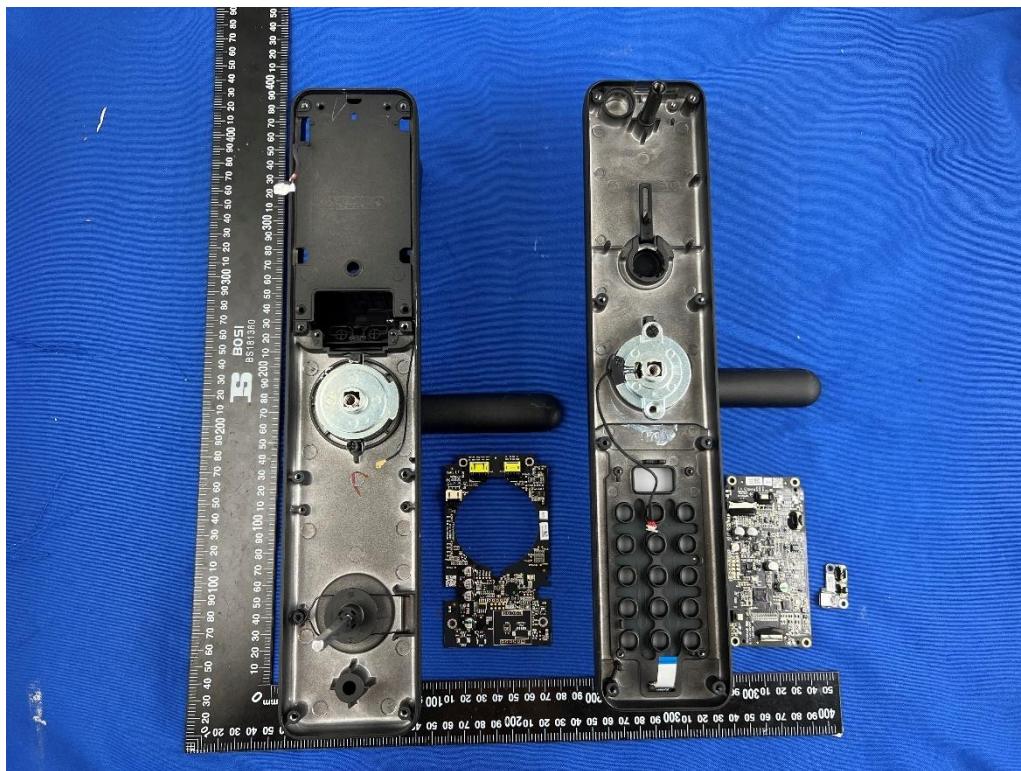


Photo 13: Inside view

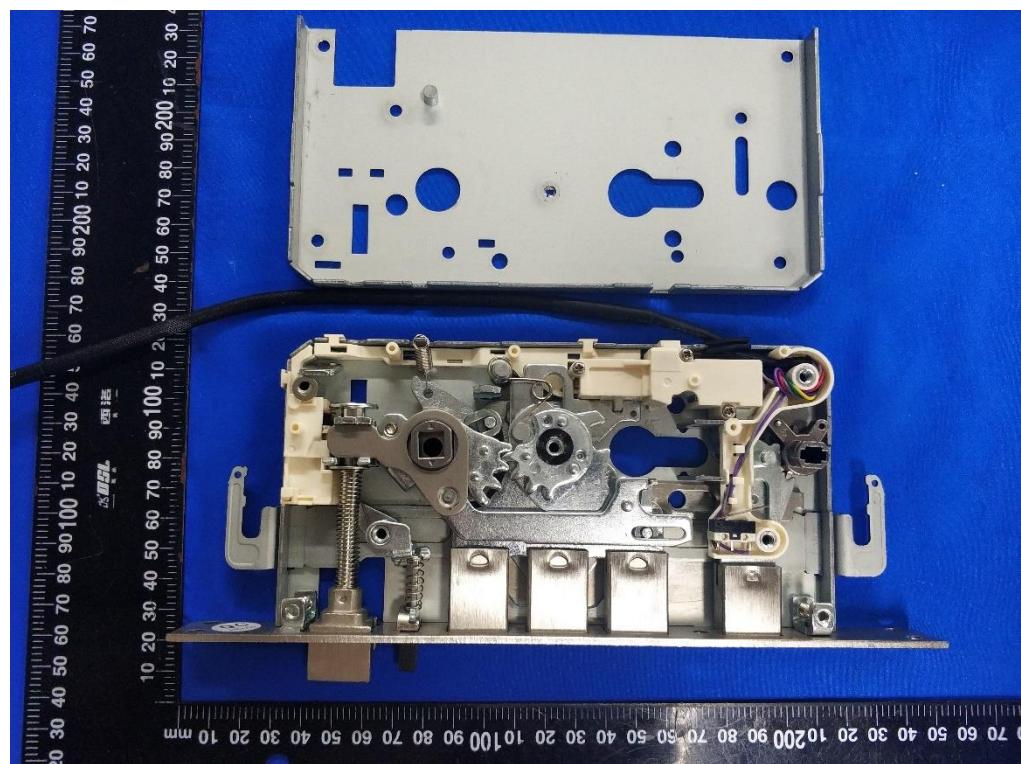


Photo 14: Inside view

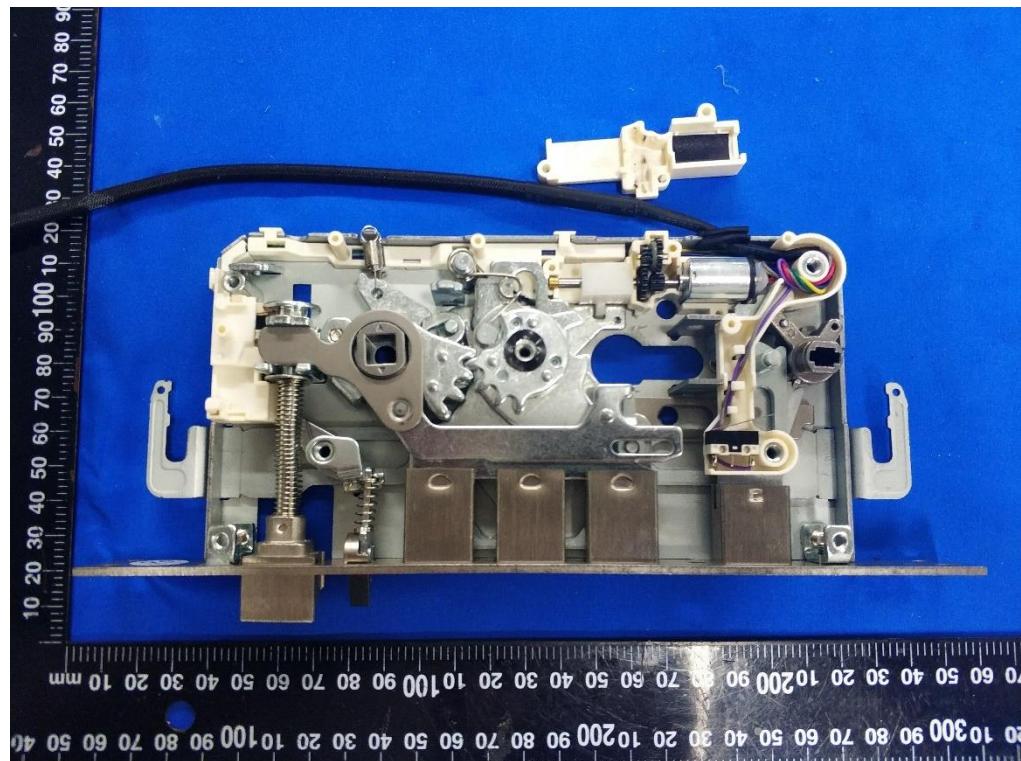


Photo 15: Inside view

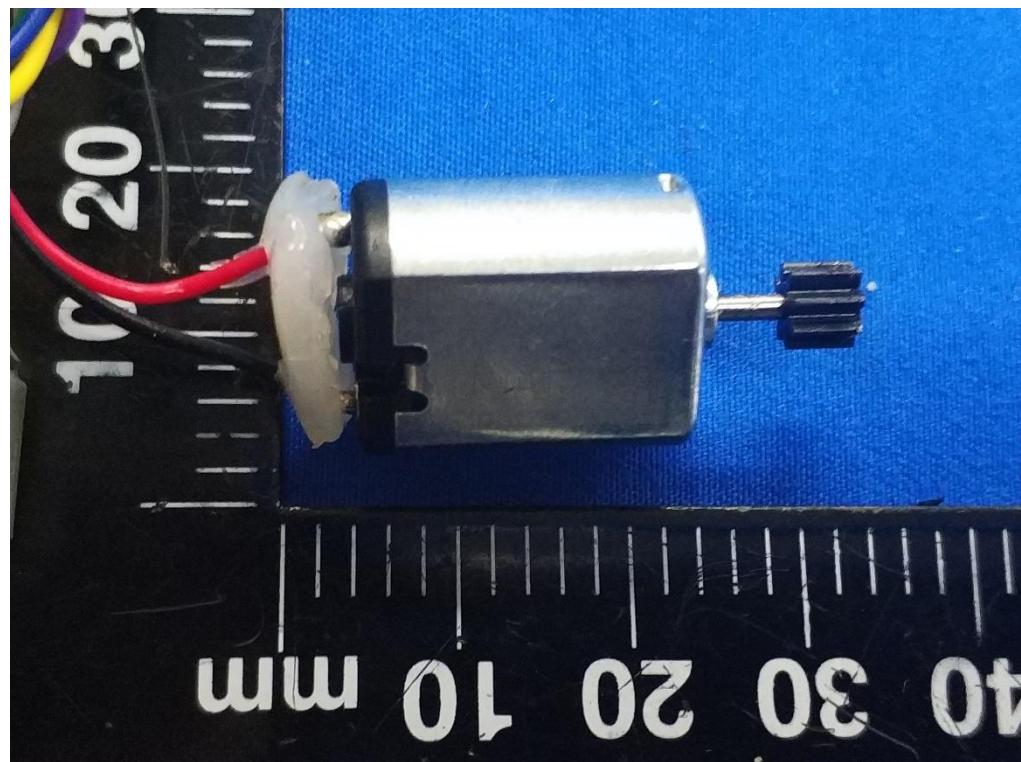


Photo 16: Motors view

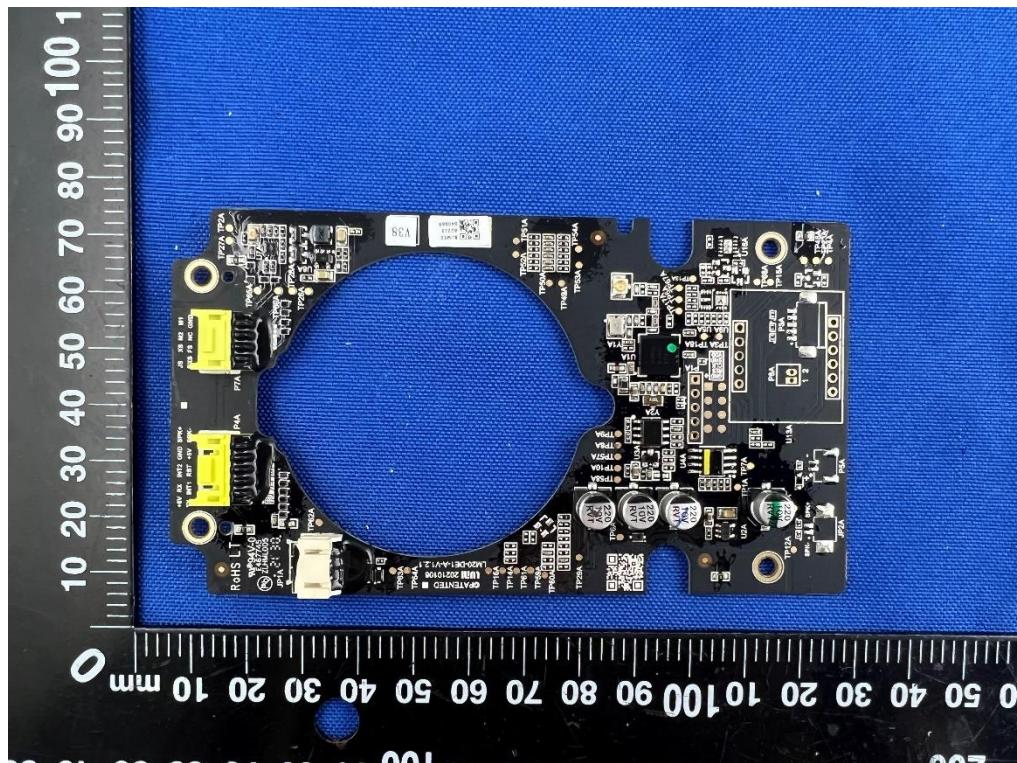


Photo 17: Main board view

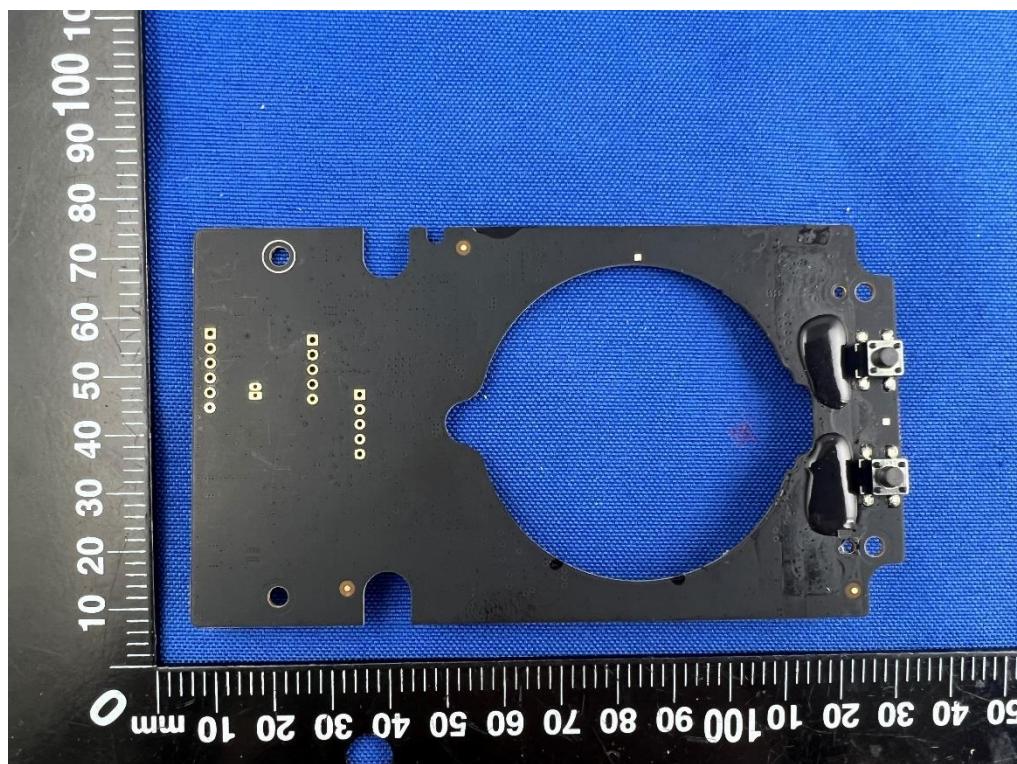


Photo 18: Main board view

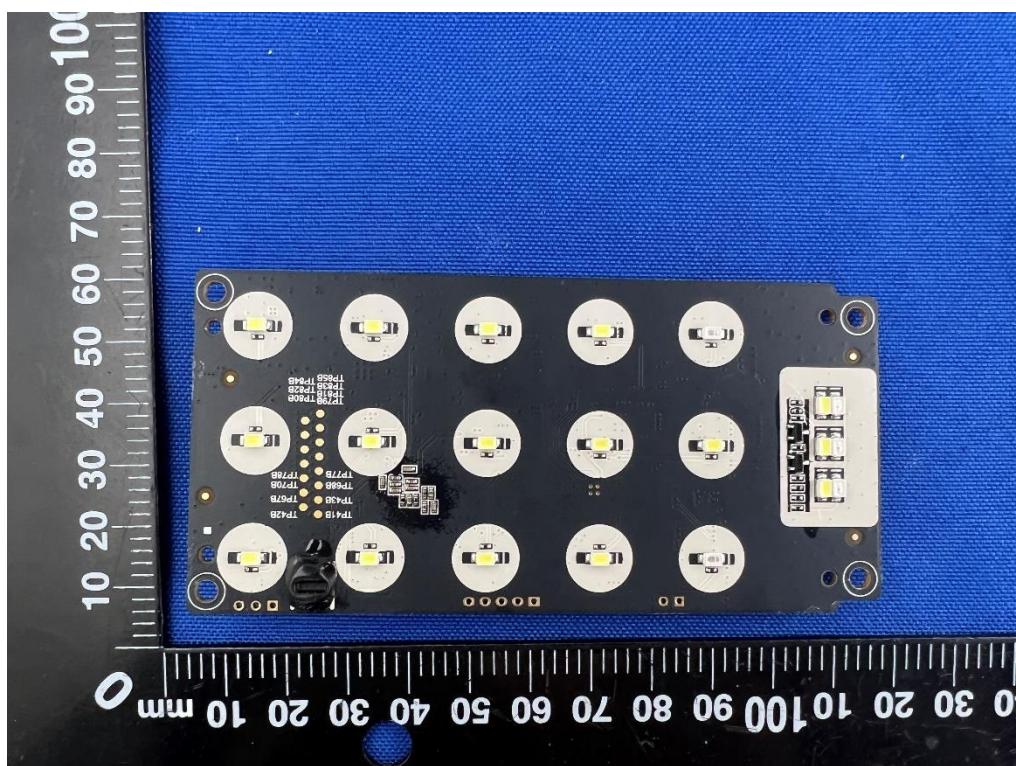


Photo 19: Main board view

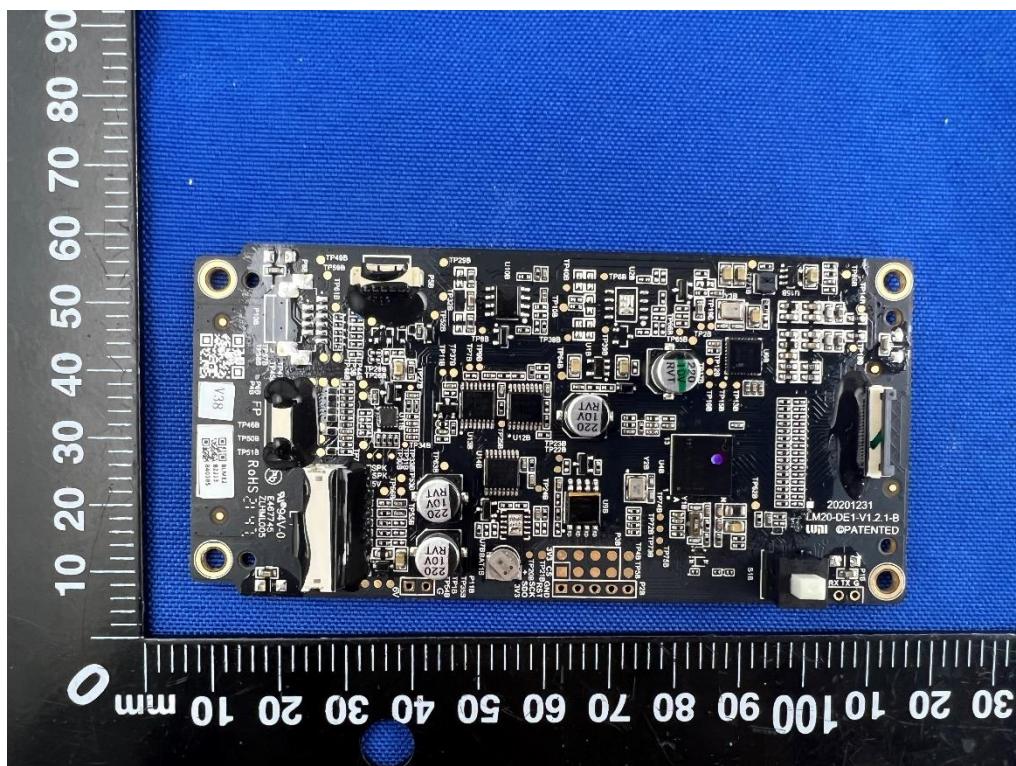


Photo 20: Main board view

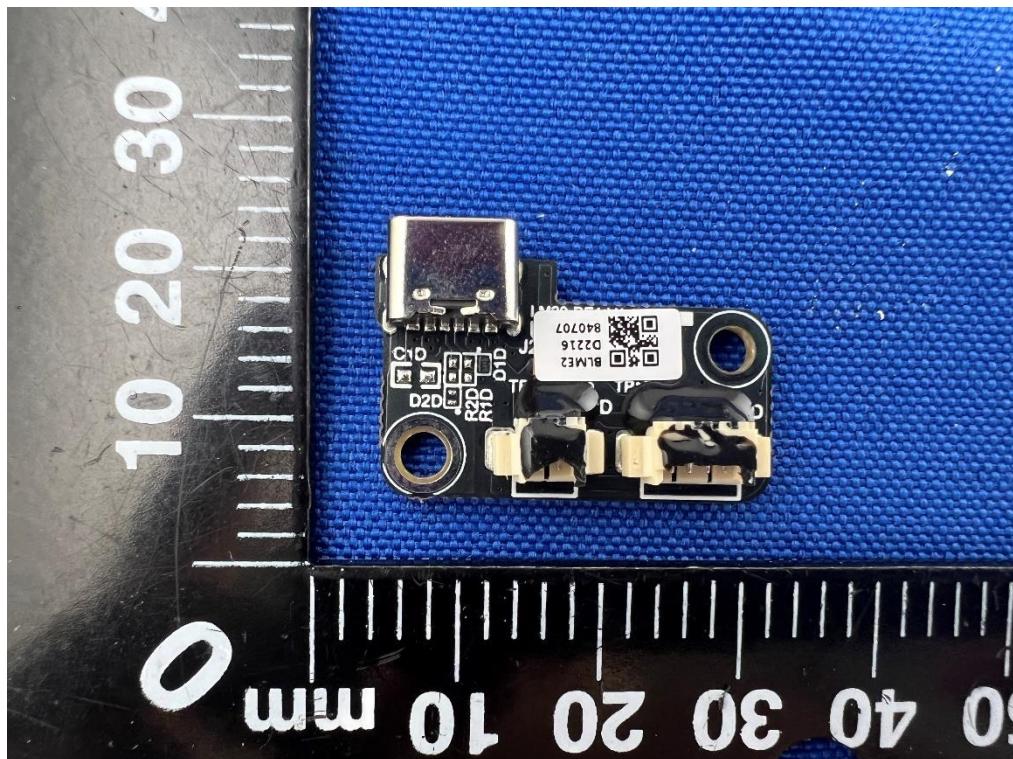


Photo 21: Small PCB view

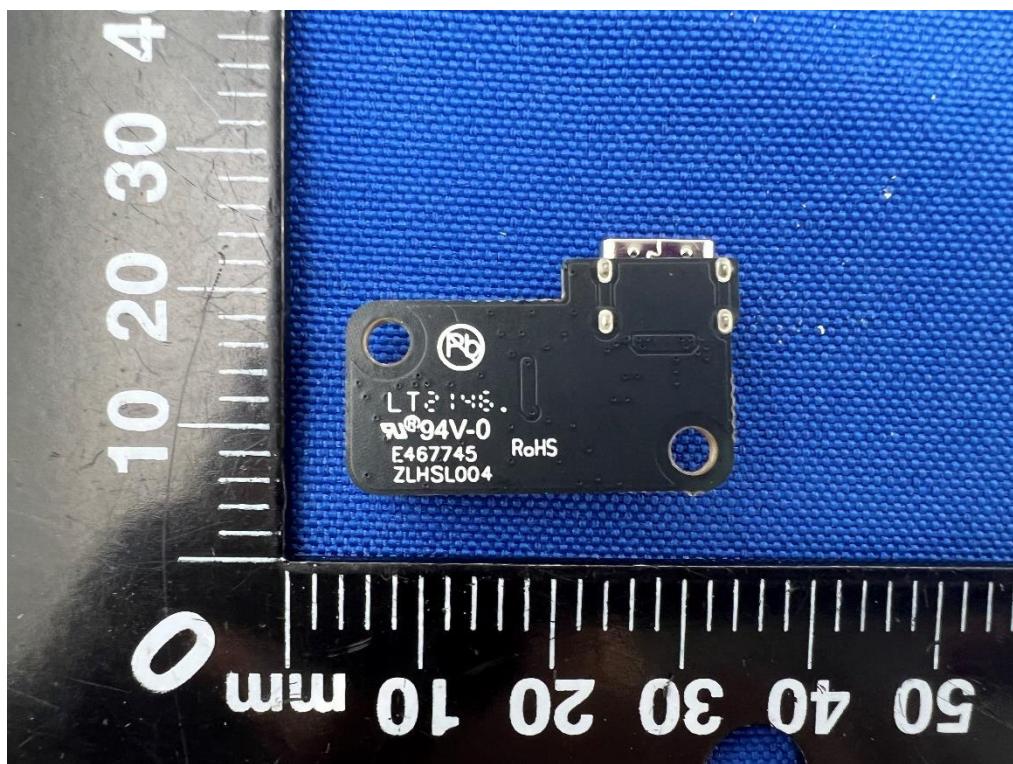


Photo 22: Small PCB view

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